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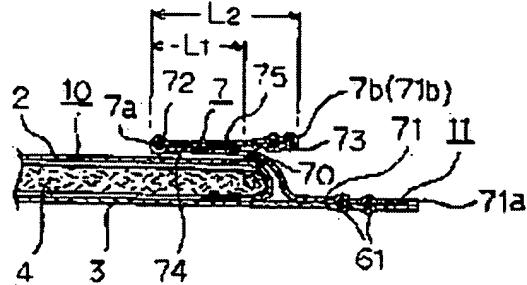
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## (54) THROW-AWAY DIAPER

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To provide a throw-away diaper which is further improved in leak preventiveness than the conventional throw-away diaper.

**SOLUTION:** This throw-away diaper includes a diaper body 10 and side flaps 11. Three-dimensional guards 7 are disposed on both left and right marginal sides of the diaper. The three-dimensional guards 7 include base ends 70, bent parts 7a and free ends 7b. Elastic members 72 and 73 are disposed at the bent parts 7a and the free ends 7b and are erected nearly upright toward the upper side. Leg part elastic members 61 are disposed in leg parts 6 of the side flaps 11. The base ends 70 are formed nearer the inner side of the diaper than the leg part elastic members 61. The length of the side flaps 11 is shorter than the height of the three-dimensional guards 7.



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## CLAIMS

## [Claim(s)]

[Claim 1] The body of a diaper which has the absorber of the liquid holdout which intervened between the surface sheet of liquid permeability, the rear-face sheet of liquid impermeability, and both sheets, And it sets to the disposable diaper possessing the side flap section of a right-and-left pair formed successively by the right-and-left edges on both sides of this body of a diaper. The solid guard of the right-and-left pair which arranged the sheet for solid guard formation on each by the side of the right-and-left edges on both sides of the above-mentioned disposable diaper, and was formed in it is allotted. The above-mentioned sheet for solid guard formation While the side end face and a side tip are turned up so that it may be located in the above-mentioned side flap section side, respectively In the condition of having turned up, longitudinal direction both ends are pasted up on the antinode flank and the back of a diaper, respectively, and it is allotted. The above-mentioned solid guard The end face section which fixed the above-mentioned sheet for solid guard formation on the above-mentioned side flap section or the above-mentioned body of a diaper, and was formed by the way side among disposable diapers, The bending section located in a way side among the bodies of a diaper which turned up the above-mentioned sheet for solid guard formation, and were formed, The free edge located in the method of the outside of the cross direction of a disposable diaper rather than this bending section is provided. An elastic member is allotted by this bending section and this free edge, and it is made at them as [ stand up / mostly / towards the upper part / in the shape of erection ], respectively. A leg section elastic member is allotted to the leg section in the above-mentioned side flap section located in the circumference of a wearer's foot, and leg gathers are formed in it. The above-mentioned end face section It is the disposable diaper which is formed in the way side among diapers rather than this leg section elastic member, and is characterized by the thing with the die length of the above-mentioned side flap section shorter than the above-mentioned solid guard's height.

[Claim 2] It is the disposable diaper according to claim 1 characterized by locating the above-mentioned free edge rather than the above-mentioned bending section at the method of the outside of the cross direction of a disposable diaper under non-stress.

[Claim 3] The above-mentioned end face section is a disposable diaper according to claim 1 or 2 characterized by being located on the above-mentioned absorber in the above-mentioned body of a diaper.

[Claim 4] A disposable diaper given in any of claims 1-3 with the die length of the above-mentioned side flap section shorter 5-30mm than the above-mentioned solid guard's height the above-mentioned side flap section has stood up towards the upper part, and they are.

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## DETAILED DESCRIPTION

## [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the disposable diaper which leaked extremely and was excellent in tightness.

[0002]

[Description of the Prior Art] The disposable diaper possessing the absorber of the liquid holdout which intervened from before between the surface sheet of liquid permeability, the rear-face sheet of liquid impermeability, and both sheets is used widely. And in the conventional disposable diaper, in order to prevent the leak from the flank of the length-from-the-crotch-to-the-cuff section, the single solid guard formed of the thin band-like web material on the above-mentioned surface sheet in the right-and-left edges on both sides of the above-mentioned absorber is allotted. However, the disposable diaper with which the conventional solid guard was allotted is not yet enough as leakage tightness, either, and the present condition is that development of the disposable diaper which was more excellent in leakage tightness is demanded.

[0003] Therefore, the purpose of this invention is to offer the disposable diaper whose leakage tightness improved further rather than the conventional disposable diaper.

[0004]

[Means for Solving the Problem] As a result of inquiring wholeheartedly that this invention persons should solve the above-mentioned technical problem, the disposable diaper which has the solid guard with whom the bending section and a free edge were provided, and who was matched with the elastic member at this bending section and this free edge on the right-and-left edges-on-both-sides section of an absorber carried out the knowledge of the ability to attain the above-mentioned purpose.

[0005] The body of a diaper which has the absorber of the liquid holdout which this invention was made based on the above-mentioned knowledge, and intervened between the surface sheet of liquid permeability, the rear-face sheet of liquid impermeability, and both sheets, And it sets to the disposable diaper possessing the side flap section of a right-and-left pair formed successively by the right-and-left edges on both sides of this body of a diaper. The solid guard of the right-and-left pair which arranged the sheet for solid guard formation on each by the side of the right-and-left edges on both sides of the above-mentioned disposable diaper, and was formed in it is allotted. The above-mentioned sheet for solid guard formation While the side end face and a side tip are turned up so that it may be located in the above-mentioned side flap section side, respectively In the condition of having turned up, longitudinal direction both ends are pasted up on the antinode flank and the back of a diaper, respectively, and it is allotted. The above-mentioned solid guard The end face section which fixed the above-mentioned sheet for solid guard formation on the above-mentioned side flap section or the above-mentioned body of a diaper, and was formed by the way side among disposable diapers, The bending section located in a way side among the bodies of a diaper which turned up the above-mentioned sheet for solid guard formation, and were formed, The free edge located in the method of the outside of the cross direction of a disposable diaper rather than this bending section is provided. An elastic member is allotted by this bending section and this free edge, and it is made at them as [ stand up / mostly / towards the upper part / in the shape of erection ], respectively. A leg section elastic member is allotted to the leg section in the above-mentioned side flap section located in the circumference of a wearer's foot, and leg gathers are formed in it. The above-mentioned end face section It is formed in the way side among diapers rather than this leg section elastic member, and the die length of the above-mentioned side flap section offers the disposable diaper shorter than the above-mentioned solid guard's height characterized by things.

[0006]

[Embodiment of the Invention] Hereafter, this invention is further explained in full detail with reference to a drawing. Drawing 1 is the perspective view showing one gestalt of the disposable diaper of this invention here, drawing 2 is the expanded sectional view showing the II-II cross section of the disposable diaper shown in drawing 1, and drawing 3 is the expanded sectional view showing the important section at the time of use of the disposable diaper shown in drawing 1.

[0007] The disposable diaper 1 of this gestalt shown in drawing 1 and 2 possesses the side flap section 11 of a Uichi Hidari pair which the right-and-left edges on both sides of the surface sheet 2 of liquid permeability, the rear-face sheet 3 of liquid impermeability, both the sheets 2, the body 10 of a diaper that has the absorber 4 of the liquid holdout which intervened among three, and this body 10 of a diaper come to form successively. In the above-mentioned disposable diaper 1, the above-mentioned rear-face sheet 3 has the shape of an overflowing sandglass, and the above-mentioned absorber 4 is smaller than this rear-face sheet 3, and it is made with the shape of a rectangle. The above-mentioned surface sheet 2 is arranged so that the front face and side face of this absorber may be covered. Moreover, the waist section elastic member 51 is allotted to the waist section 5 in the disposable diaper 1, and waist gathers are formed in it.

[0008] Moreover, the FASUNINGU tape 8 is arranged on the right-and-left edges-on-both-sides section of the back B of the disposable diaper 1, respectively. That is, the leg section elastic member 61 is allotted to the leg section 6 whose disposable diaper of this gestalt is a disposable diaper of an expansion mold and which is located in the circumference of a wearer's foot again, and leg gathers are formed. Moreover, the side flap section 11 is formed of the leg section elastic member 61 pinched with the rear-face sheet 3 and the sheet 71 for solid guard formation which extended in the side of an absorber 4, and both the sheets 3 and 71 so that it may mention later. Moreover, as a formation ingredient of the surface sheet 2, the rear-face sheet 3, an absorber 4, elastic members 51 and 61, and the FASUNINGU tape 8, what is used for the usual disposable diaper can be especially used without a limit. Such structure is the same as the usual disposable diaper.

[0009] \*\* and it sets to the disposable diaper 1 of this gestalt. As shown in drawing 1 and 2, to each by the side of the right-and-left edges on both sides of the above-mentioned disposable diaper 1 The solid guard 7 of the right-and-left pair which arranged the sheet 71 for solid guard formation, and was formed is allotted. The sheet 71 for solid guard formation While being turned up so that the side end face 71a and side tip 71b may be located in the above-mentioned side flap section 11 side In the condition of having turned up, the longitudinal direction both ends 71c and 71d are pasted up on the antinode flank A and Back B of a diaper, and it is allotted. The solid guard 7 The end face section 70 which fixed the sheet 71 for solid guard formation in the side flap section 11, and was formed by the method side of the inside of a disposable diaper, Bending section 7a located in a way side among the bodies 10 of a diaper which turned up the above-mentioned sheet 71 for solid guard formation, and were formed, Free edge 7b located in the method of the outside of the cross direction of a disposable diaper rather than bending section 7a is provided, elastic members 72 and 73 are allotted to bending section 7a and free edge 7b, respectively, and it is made as [ stand up / mostly / towards the upper part / in the shape of erection ].

[0010] Hereafter, it explains in full detail further. The disposable diaper 1 of this gestalt is made as [ locate / not only the expansion condition that made the elongation condition each gathers as shown in drawing 1 and 2 but under non-stress / at the method of the outside of the cross direction of a disposable diaper / rather than bending section 7a / free edge 7b ]. Here, "the bottom of non-stress" means the condition of not giving external force at all. The above-mentioned end face section 70 is formed in the way side among diapers rather than the leg section elastic member 61.

[0011] Moreover, the solid guard 7 who stood up is the part which comes to fix on the body 10 of a diaper, and the solid guard's 7 end face section 70 is located on the absorber 4 in the body 10 of a diaper.

[0012] Moreover, as shown in drawing 3 , it is the die length L3 of the side flap section 11. The solid guard's 7 height T1 It is short. The die length L3 of the side flap section 11 It is desirable to be referred to as 10-50mm, and it is the solid guard's 7 height T1. It is desirable to be referred to as 15-80mm, and it is the die length L3 of the side flap section 11. The solid guard's 7 height T1 One short 5-30mm is desirable.

[0013] As shown in drawing 2 , the solid guard 7 on either side is formed from the above-mentioned sheet 71 for solid guard formation of one sheet, respectively. The solid guard 7 namely, the sheet 71 for solid guard formation arranged so that the side edge of an absorber 4 might be covered from the side edge by the side of the leg section 6 of a diaper The surface sheet 2 is pasted in the end face section 70, and it is constituted by turning to the upper part (front-face side of the surface sheet 2) of a diaper, and the method of the outside of the cross direction the sheet 71 for solid guard formation located in the method side of the inside of the cross direction of the disposable diaper 1, turning it up, and forming bending section 7a. Thus, the solid guard 7 is classified into the lower part wall 74 located between the end face section 70 and this bending section 7a, and the upper part wall 75 located between bending section 7a and free edge 7b by being constituted. And since it is made with the free part which has not been pasted up on other members (a surface sheet, rear-face sheet, etc.), respectively, the lower part wall 74 and the upper part wall 75 are made as [ form / both stand up towards the upper part in one and continuously at the time of use, and / an anti-leak barrier ].

[0014] Moreover, the sheet 71 for solid guard formation was arranged so that the side edge of the side face of an absorber 4 and the leg section 6 of a disposable diaper might be covered, and it has fixed on the rear-face sheet 3. Thereby, the elastic members 61 and 61 of the leg section 6 are being pinched and fixed with the rear-face sheet 3 and the sheet 71 for solid guard formation.

[0015] Moreover, in Back B and the antinode flank A, the whole has fixed the sheet 71 for solid guard formation on the surface sheet 2 and the rear-face sheet 3 with the inserted-in gestalt, and the solid guard 7 is not formed. That is, if the solid guard 7 is formed in the length-from-the-crotch-to-the-cuff section C at least, he does not need to be continued and formed in the whole disposable diaper.

[0016] Moreover, in bending section 7a, the sheet 71 for solid guard formation of the lower part wall 74 and this sheet 71 for solid guard formation of the upper part wall 75 have pasted up [ near the elastic member ] so that the hoop direction whole region of an elastic member 72 may be covered with the sheet 71 for solid guard formation. Moreover, also in free edge 7b, while the sheet 71 for solid guard formation is turned up so that the hoop direction whole region of an elastic member 73 may be covered with the sheet 71 for solid guard formation, the turned-up part has pasted the upper part wall 75.

[0017] As for the die length L1 of the lower part wall 74, it is desirable to be referred to as 10-40mm, and it is still more desirable to be referred to as 20-30mm. Moreover, as for the die length L2 of the upper part wall 75, it is desirable to be referred to as 5-60mm, and it is still more desirable to be referred to as 20-30mm. Moreover, it is arbitrary which [ of the die length L1 of the lower part wall 74 and the die length L2 of the upper part wall 75 ] is lengthened.

[0018] The sheet 71 for solid guard formation is heat sealed on the surface sheet 2, it fixes, and the end face section 70 is formed, as shown in drawing 2 . Moreover, the end face section 70 considers as the shape of the shape of a straight line, and a curve, and it is [ the width of face ] desirable to be referred to as 2-20mm.

[0019] Moreover, a water-repellent nonwoven fabric etc. is mentioned as a sheet 71 for solid guard formation. Although it can use without a limit especially if it is the water-repellent thing usually used for absorptivity goods, such as a disposable diaper, as such a water-repellent nonwoven fabric, specifically, the nonwoven fabric formed according to the following formation approach can be used using the following formation ingredient. Formation ingredient; it is the ingredient in which nonwoven-fabric-izing is possible at water repellence, such as a compound filament which has the filament; core / shell fabricated from the independent resin of thermoplastics, such as polyethylene, polypropylene, polyethylene terephthalate, and a polyamide, side-by-side structure, etc. The formation approach; a span bond method, a binder method, a water needling method, a needle punch method, etc. They are the method which specifically carries out adhesion arrival of the staple fiber which extended the filament if needed and carried out curine ping processing, and which was cut by the usual melt spinning with heat, adhesives, etc., or carries out a confounding with a stream, a needle, etc., i.e., a wet method, dry process, the SUPAN ball-race method, or the span bond method. Moreover, as the above-mentioned nonwoven fabric, after fabricating a multilayer filament, the nonwoven fabric which consists of a division filament which divided this multilayer filament according to external force can also be used. Furthermore, the nonwoven fabric directly fabricated by the melt BURON fabricating method can also be used.

[0020] The disposable diaper 1 of this gestalt can be used like the disposable diaper of the usual expansion mold. As shown in drawing 3 at the time of use, it inclines a little and the above-mentioned lower part wall 74 stands up so that the method side of the inside of the cross direction of the disposable diaper 1 may serve as the upper part, it inclines a little, the above-mentioned upper part wall 75 stands up so that the method side of the outside of the cross direction of the disposable diaper 1 may serve as the upper part, and the above-mentioned solid guard 7 in the disposable diaper 1 of this gestalt stands up in the shape of erection (the shape of a character of \*\*\*\*\*) mostly as a whole. Moreover, the side flap section 11 also stands up towards the upper part according to an operation of leg gathers. Since the solid guard is constituted like \*\*\*\*\*, the body fluid which it not only stops leakage, but leaked and came out exceeding the lower part wall 74 by the lower part wall 74 is effectively guardable by the upper part wall 75. Moreover, with the conventional simple inner sense solid guard, although

absorption inhibition of an absorber might be caused, since it is constituted like \*\*\*\*\*, in order that a solid guard may not cover the top face of an absorber beyond the need at the time of use, absorption inhibition is not caused with the disposable diaper of this gestalt. Furthermore, in this gestalt, although elimination rates, such as urine, may exceed a solid guard with the vigor in the conventional simple outward solid guard at an early thing, since the lower part wall has turned to the inner direction, there is such no problem.

[0021] Moreover, when the solid guard 7 stands up in this way, while fit nature becomes good, the touch area of the configuration member a disposable diaper's and a wearer's skin increases, and leakage tightness improves. Moreover, since the pocket section is formed between the solid guard 7 and the side flap section 11, even if body fluid should leak out exceeding a solid guard, this body fluid can be caught in the pocket section, and leakage can be prevented more effectively. Moreover, since the solid guard 7 is constituted like \*\*\*\*\*, also when leg gathers are formed, the function of these leg gathers is not checked and the leakage from a flank can be effectively prevented by the solid guard 7 and leg gathers. Furthermore, since leg gathers are shorter than a solid guard, for an effectively suitable [ a solid guard / inside ]-during wearing reason, desired effectiveness can be demonstrated more. In short, in order that the above-mentioned solid guard 7 may be formed like \*\*\*\*\*, and the disposable diaper 1 of this gestalt may incline and stand up with the gestalt like \*\*\*\*\* at the time of use, it is excellent in the fit nature to a wearer as compared with the solid guard of the conventional gestalt, consequently its leakage tightness improves further.

[0022] After it makes elastic members 72 and 73 intervene after the disposable diaper of this gestalt makes absorption 4 intervene, makes the surface sheet 2 and the rear-face sheet 3 rival according to a conventional method and makes members other than a solid guard fix, and it inserts in the sheet 71 for solid guard formation like \*\*\*\*\*, it can heat seal a predetermined part, and can form and manufacture the above-mentioned end face section 70. In a detail, after forming in a right-and-left edges-on-both-sides side the body of a diaper with which a rear-face sheet comes to extend according to a conventional method, it can manufacture by performing the solid guard formation process which has each following process. While turning up the free edge formation process which allots an elastic member to the end section of the sheet for solid guard formation, and forms a free edge, and the sheet for solid guard formation with which the gestalt of the free edge was carried out The bending section formation process which allots an elastic member to the part to turn up and forms the bending section, The lamination process which sticks the longitudinal direction both ends of the sheet for solid guard formation in which a free edge and the bending section were formed, The sheet adhesion process of pasting up the other end side of the sheet for solid guard formation on a side flap, and the fixing process which fixes the longitudinal direction both ends of the sheet for solid guard formation on the body of a diaper.

[0023] In addition, the disposable diaper of this invention is not restricted to an above-mentioned gestalt, and can be variously changed in the range which does not deviate from the meaning of this invention. For example, each above-mentioned solid guard can continue and form in the whole longitudinal direction of a disposable diaper. Moreover, the configuration of the above-mentioned end face section can also be made into the curved configuration.

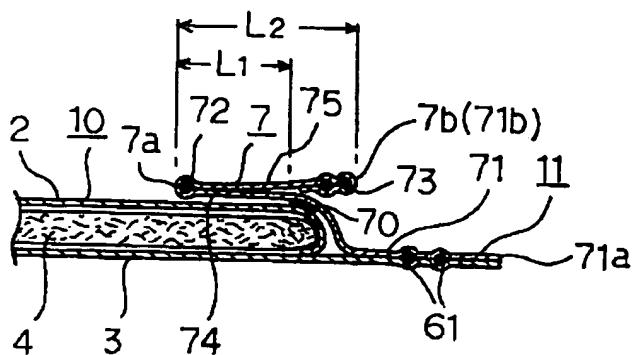
[0024]

[Effect of the Invention] Leakage tightness of the disposable diaper of this invention improves further rather than the conventional disposable diaper.

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[Translation done.]

Drawing selection Representative drawing

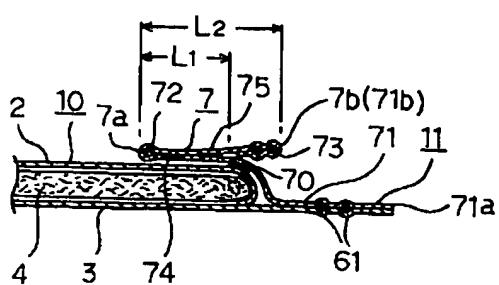


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Drawing selection drawing 2

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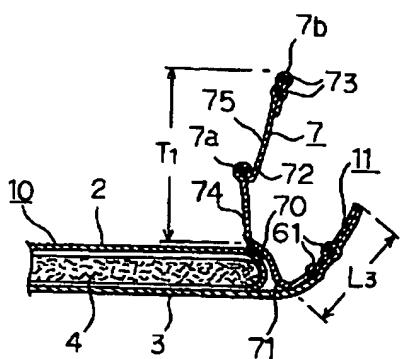


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Drawing selection drawing 3



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